

EXHIBIT 2

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EXHIBIT 2

Patent 10,218,606	The WhatsApp System
1. A method for routing communications in a packet switched communication system between a first participant device associated with a first participant and a second participant device associated with a second participant, the first and second participant devices being associated with first and second network elements of the communication system, respectively, the method comprising:	<p>The WhatsApp System routes a communication in a packet switched communication system between a first participant device associated with a first participant and a second participant device associated with a second participant, the first and second participant devices being associated with first and second network elements.</p> <p>The first participant device and the second participant device each comprise a mobile device running a version of the WhatsApp application. These mobile devices are coupled to a network of servers and gateways controlled by WhatsApp. The WhatsApp System consists of multiple servers in clusters each connected to multiple mobile devices and networked via local and wide area networks. The WhatsApp System allows a mobile device running the WhatsApp application to send a communication to another mobile device that is also running the WhatsApp application.</p>

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The image shows the Google Play Store page for WhatsApp Messenger. The app icon is a green square with a white phone receiver inside a speech bubble. The title 'WhatsApp Messenger' is at the top, followed by 'Editors' Choice' and a 4.5-star rating with 108,164,713 reviews. The developer is 'WhatsApp Inc.' and the category is 'Communication'. The age rating is 'Everyone'. A note says 'This app is compatible with your device.' There are 'Add to Wishlist' and 'Install' buttons. Below the store page are four screenshots of the app's interface: 1. A list of contacts and chats. 2. A screen showing a photo of a yellow tram. 3. A video call screen with a woman in a hoodie. 4. A screen showing a voice message interface.

WhatsApp from Facebook

WhatsApp Messenger is a FREE messaging app available for Android and other smartphones. WhatsApp uses your phone's Internet connection (4G/3G/2G/EDGE or Wi-Fi, as available) to let you message and call friends and family. Switch from SMS to WhatsApp to send and receive messages, calls, photos, videos, documents, and Voice Messages.

<https://play.google.com/store/apps/details?id=com.whatsapp>

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App Store Preview

This app is available only on the App Store for iPhone and iPad.

WhatsApp Messenger 12+
Simple. Reliable. Secure.
WhatsApp Inc.
#8 in Social Networking
★★★★★ 4.7, 6.9M Ratings
Free

iPhone Screenshots



Simple. Personal. Real time messaging.

Chats

New Group

Whitman Chat

Stewart Family

Jane Whitman

Thomas Stewart

Lunch Group

You

Jon Pearson

Alice

It's the weekend

Send photos and videos instantly

Message quickly with Voice Messages

Simple. Reliable. Secure. — WhatsApp from Facebook

WhatsApp Messenger is a FREE messaging app available for iPhone and other smartphones. WhatsApp uses your phone's Internet connection (4G/3G/2G/EDGE or Wi-Fi, as available) to let you message and call friends and family. Switch from SMS to WhatsApp to send and receive messages, calls, photos, videos, documents, and Voice Messages.

<https://apps.apple.com/us/app/whatsapp-messenger/id310633997>

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receiving, by at least one processor, a second participant identifier associated with the second participant device, in response to initiation of a communication from the first participant device to the second participant device, the first participant device being associated with a first participant identifier;	The WhatsApp System includes processing by the mobile application, running on the mobile device as well as processing by one or more WhatsApp servers. One or more of the processors on the mobile device receives an input from the user to select the second participant. The user input, which may consist of a partial name or a partial number input into the contact list search box, and/or an input on a touch screen displaying contacts constitutes the second participant identifier. The first participant is registered with WhatsApp and has a WhatsApp username and phone number, which may constitute a first participant identifier. https://www.wikihow.tech/Find-Someone-on-WhatsApp
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	<p>Making voice calls</p> <p>Voice Calling lets you call your contacts using WhatsApp for free, even if they're in another country. Voice calling uses your phone's Internet connection rather than your cellular plan's voice minutes. Data charges may apply.</p>  <p>Note: You can't access emergency service numbers through WhatsApp (e.g. 911 in the United States). To make emergency calls, you must make alternative communication arrangements.</p> <p>To place a voice call:</p> <ol style="list-style-type: none">1. Open the chat with the contact you want to voice call.2. Tap Voice call  <p>https://faq.whatsapp.com/en/android/28000016</p>
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causing the at least one processor to access at least one memory storing a first participant profile identifying at least one first participant attribute;	One or more processors on the mobile device access data stored on the mobile device and/or data stored on a WhatsApp server to locate the contact list for the first participant. This information is specific to the first participant and constitutes at least part of the first participant profile.
processing the second participant identifier and the at least one first participant attribute, using the at least one processor, to produce a new second participant identifier based on at least one match between the second participant identifier and the at least one first participant attribute;	<p>One or more processors on the mobile device process the selection of a user by and retrieve a WhatsApp username associated with the displayed information. When the user enters a partial name or partial number into the search box, a list of matching contacts is displayed. When the user selects a contact by tapping on the touch screen a contact is selected. Each of the listed contacts is a WhatsApp user and has an associated username and phone number. The WhatsApp username and/or phone number of a selected contact constitutes the new second participant identifier.</p> <p>To place a voice call:</p> <ol style="list-style-type: none"> 1. Open the chat with the contact you want to voice call. 2. Tap Voice call  <p>https://faq.whatsapp.com/en/android/28000016</p>
processing the new second participant identifier, using the at least one processor, to determine whether the second network element is the same as the first network element;	<p>The WhatsApp System determines if the first participant device is associated with the same network element as the second network element. For example, the first participant device and the second participant device may be serviced by the same node or cluster or a different node or cluster. On information and belief, the WhatsApp System is a large scale service that operates on multiple distributed nodes coupled to each other over a wide area network.</p> <p>“What has hundreds of nodes, thousands of cores, hundreds of terabytes of RAM, and hopes to serve the billions of smartphones that will soon be a reality around the globe? The Erlang/FreeBSD-based server infrastructure at WhatsApp.”</p> <p>http://highscalability.com/blog/2014/2/26/the-whatsapp-architecture-facebook-bought-for-19-billion.html</p>
when the second network element is determined to be the same as the first network element, producing a	The WhatsApp System produces a routing message that identifies an address associated with the first network element when the first and second network elements are the same.

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routing message identifying a first network address associated with the first network element, using the at least one processor; and	Routing of WhatsApp messages and/or calls between mobile devices can take place on the same node or may require that messages and/or calls go between nodes.
when the second network element is determined not to be the same as the first network element, producing a routing message identifying a second network address associated with the second network element, using the at least one processor;	<p>The WhatsApp System produces a routing message that identifies an address associated with the second network element when the first and second network elements are not the same.</p> <p>Routing of WhatsApp messages and/or calls between mobile devices can take place on the same node or may require that messages and/or calls go between nodes.</p>
wherein the packet switched communication system attempts to establish the communication from the first participant device to the second participant device based on at least one network address identified in the routing message.	The WhatsApp System attempts to establish the communication (e.g., a WhatsApp message and/or call) from the first participant device to the second participant device based on the routing message.
8. The method of claim 1 further comprising: (a) updating a database to cause at least one user-specific first participant attribute to be modified,	Contacts can be added to the WhatsApp System by adding a contact using a PSTN number.

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	<p>Adding contacts</p> <p>WhatsApp quickly and easily recognizes which of your contacts are using WhatsApp by accessing your phone's address book.</p> <p>Adding a new contact</p> <ol style="list-style-type: none"> 1. Save a contact's name and phone number in your phone's address book. <ul style="list-style-type: none"> ◦ If it's a local number: Save the number in the same format you would use if you were to call that contact. ◦ If it's a foreign number: Save the number in full international format: <ul style="list-style-type: none"> ◦ + [Country Code] [Full Phone Number]. ◦ Omit any leading 0's from the phone number. 2. Open WhatsApp and go to the Chats tab. 3. Tap the new chat  icon > More options  > Refresh. <p>https://faq.whatsapp.com/en/android/21082107</p>
(b) wherein the second participant identifier identifies a device in communication with a public switched telephone network (PSTN),	<p>The WhatsApp contact identified by the second participant identifier identifies a mobile device that has a PSTN number associated with it. The second participant device is in communication with the PSTN.</p> <p>Finding your favorites/contacts list</p> <p>WhatsApp quickly and easily recognizes which of your contacts are using WhatsApp by accessing your phone's address book.</p>

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	<p>To find your favorites/contacts go to the Chats tab and tap the New chat icon.</p> <p>If you can't see your contacts:</p> <ul style="list-style-type: none"> • Make sure that your contacts are using WhatsApp. • Make sure that you've saved your contacts' phone numbers in your phone's address book. If they use a foreign phone number, use the full international format. <p>https://faq.whatsapp.com/en/android/20970403/</p>
(c) wherein the communication comprises a video or audio call,	<p>The WhatsApp system allows both video and audio calls.</p> <p>Switching between video and voice calls</p> <p>To switch from a video call to a voice call:</p> <ol style="list-style-type: none"> 1. While on the video call, tap Video off , which will notify the contact you're video calling. 2. Once the contact turns their video off, the call will be switched to a voice call. <p>https://faq.whatsapp.com/en/android/26000026</p>
(d) wherein the packet switched communication system, including the first and second network elements, form a private network operably configured to provide communication services to subscribers thereof, and	<p>The WhatsApp System forms a private network that provides communication services to WhatsApp users.</p>

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	<p>Simple. Secure. Reliable messaging.</p> <p>With WhatsApp, you'll get fast, simple, secure messaging and calling for free*, available on phones all over the world.</p> <p><small>* Data charges may apply. Contact your provider for details.</small></p> <p> Android</p> <p> iPhone</p> <p> Mac or Windows PC</p> <p>https://www.whatsapp.com/</p>
(e) wherein the at least one network element of the communication system comprises a call controller operable to establish the video or audio call to the second participant device in response to the routing message.	One or more servers operated by WhatsApp constitute a call controller that operate to establish the video or audio call in response to the routing message.